

REMARKS

Claims 1-20 are pending in the subject application. Claims 11-17 have been withdrawn from consideration, but not yet canceled. Claims 1, 2, 3, and 20 have been amended herein.

Support for the amendment of claim 1 may be found in the specification on page 4, lines 35-38. The remaining amendments are minor in nature and were made to improve the clarity of the claim language. No new matter has been introduced by the amendments made herein.

Initially, Applicants request that the Examiner reconsider the restriction requirement. As set forth in Applicants' October 8, 2009 Response to Restriction Requirement, claims 11-17 are dependent claims that depend from claim 1, and are simply preferred embodiments of the invention.

Claim 1 requires, *inter alia*, that the "membrane is connected with at least one supporting foil during at least all coating steps...." Claim 11 simply adds the details, *inter alia*, that the back side of the membrane have a supporting foil while the front side is coated, and that the front side of the membrane have a supporting foil while the back side is being coated -- clearly a dependent embodiment of claim 1.

The Examiner's characterization of Groups 1 and 2 is not understood. Group 1 allegedly pertains to specifics of how the foil support is created and used, while Group 2 allegedly pertains to forming a layered structure. See page 2 of the Office Action.

In fact, both groups of claims pertain to a process of manufacturing a 3-layer membrane which involves the use of a supporting foil. It is not understood how one group can be alleged as being directed to the creation and use of a supporting foil while the other group is alleged to be directed to a layered structure. Both groups are directed

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to layered structures and both groups use a supporting foil. Applicants believe the restriction requirement is incorrect and should be withdrawn.

In the January 25, 2010 Office Action, the Examiner rejected:

claims 1-4, 6-10 and 19-20 under 35 USC §103(a) as allegedly obvious over Kohler, et al (US Patent Pub. 2002/0064593) in view of Puffer, et al. (US Patent Pub. 2005/0281981);

claims 4, and 6-10 under 35 USC §103(a) as allegedly obvious over Kohler, et al (US Patent Pub. 2002/0064593) and Puffer, et al. (US Patent Pub. 2005/0281981) in view of Yoshitake (JP 2001/160405);

claim 5 under 35 USC §103(a) as allegedly obvious over Kohler, et al (US Patent Pub. 2002/0064593) and Puffer, et al. (US Patent Pub. 2005/0281981) in view of Gestermann, et al. (US Patent Pub. 2003/0162081 and WO 2001/093353).

Applicants disagree with the Examiner position. The present invention claims a process for making a catalyst coated membrane using a perforated support film for the membrane during coating. The Examiner admits that primary reference Kochler does not teach the use of a perforated support film (see January 25th Office Action, page 3, end of second paragraph). Puffer also does not teach the use of perforated support films. In section 0057, which is cited by the Examiner, it is clearly stated that *holes or perforations 260 may be introduced to the gasket 218 -- not to the support foil*. Further down in section 0057 it is stated that "*...perforations may correspond with the passages in the assembled fuel cell.(. .) passages which supply and vent gases to the MEA. . .*"

Thus, from the Puffer reference itself, it is clear that the gasket in Puffer is not a support film within the meaning of the phrase in the present application. Perforated gaskets are standard and widely used in fuel cell technology. They are different than the perforated support film of the present invention. The holes in a gasket are necessary for

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the gas and water supply of the cell. This is not true for the support film. Additionally, the holes in the gasket are not in contact with a moist catalyst layer during the coating step, as they are for the perforated support film of the present invention. In sum, the gaskets of the Puffer reference are different from, and do not function as, the supporting foils of the present invention.

Furthermore, Applicants have amended claim 1 herein to add the limitation that the perforated support film is a temporary film that is removed after coating and prior to final assembly of any MEA or fuel cell stack containing the membrane. See amended claim 1 above, and the specification on page 4, lines 35-38, and Example 1. The gaskets of Puffer do not fulfill this limitation.

Moreover, the MEA manufacturing process disclosed by Puffer is completely different than that of the present invention. As stated in section 0052 of Puffer, an electrode/gas diffusion electrode is placed in the aperture (perforation) of the gasket and then mounted. This process has nothing to do with the process of making a catalyst coated membrane, wherein the membrane is supported by a perforated supporting foil during the coating steps. To put simply, Puffer does not teach a process for catalyst coating of a membrane.

Applicants also like to renew their objection to the use of the Puffer reference. As previously presented, Applicants believe the effective date of the Puffer reference is August 20, 2003 (the filing date of the underlying international PCT application) – almost two months after the filing date of the present application. The Examiner contends that the Puffer reference is entitled to the filing date of provisional application 60/407115 -- August 20, 2002 – and that the provisional application contains the information relied upon in the rejection. Applicants disagree but, in any event, cannot verify the Examiner's contention since provisional application 60/407115 is not publicly available. If the Examiner maintains the rejection based on Puffer, Applicants request that a copy of provisional application 60/407115 be provided for Applicants' review.

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The Examiner also looks to the Gestermann reference as teaching a perforated support foil for a multi-layer gas diffusion electrode. See page 6 of the Office Action. The Examiner is incorrect. The Gestermann reference teaches a multi-layer gas diffusion electrode which has a base plate having perforation slots for gas supply. This base plate is not a supporting foil for catalyst coating, as outlined in the present invention.

Additionally, the catalyst-containing layer of Gestermann is permanently joined with the gas permeable base plate (see Gestermann, section 001). As discussed above, Applicants have added a limitation to claim 1 requiring that the perforated support foil of the claimed invention be a temporary film that is removed after coating and prior to final assembly of any MEA or fuel cell stack containing the membrane. See amended claim 1 above. The base plate of Gestermann does not fulfill this limitation of claim 1.

Likewise, the Yoshitake reference cited by the Examiner fails to teach or suggest the claimed invention. Yoshitake may disclose forming catalyst layers on an ion exchange membrane using a supporting foil, but it does not disclose the requirement of amended claim 1 that the supporting foil is perforated.

In view of the claim amendment to claim 1 made herein, Applicants maintain that the presently claimed invention is patentably distinct from the cited references. The remaining pending claims of the subject application depend from, and contain all the limitations of, independent claim 1. Accordingly, these claims are distinguishable from the cited references based on the same reasons presented above for claim 1.

In light of the foregoing remarks and claim amendments, Applicants respectfully requests withdrawal of the rejections set forth in the January 25, 2010 Office Action and allowance of the present application.

Applicants also wish to point out to the Examiner that the corresponding European application has been granted – see EP 1 645 001 B1 (a copy of which is enclosed). This granted application has broader claims than those of the present

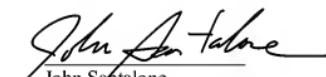
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application.

No fee is believed due in connection with the filing of the present amendment, other than the fee for the requested three-month extension of time and the fee for the accompanying RCE, which Applicants are concurrently filing with the present response. If any additional fees are due, or an overpayment has been made, please charge, or credit, our Deposit Account No. 11-0171 for such sum.

If the Examiner has any questions regarding the present application, the Examiner is cordially invited to contact Applicants' attorney at the number provided below.

Respectfully submitted,



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